PRELIMINARY

75Ω Driver with Filer and Y/C MIX

■ GENERAL DESCRIPTION

NJM2570 is a video amplifier included LPF in Y and C system.
Adjustable LPF characteristic with external resistor and output with 75ohm driver optimize the TV monitor system.
Also, it can discriminated the aspect ratio of TV by internal DC interface for S terminal.
NJM2570 includes power save circuit to suitable for portable video application.

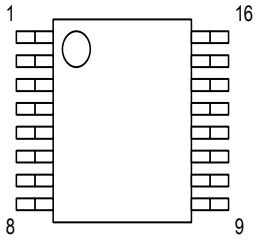
■ PACKAGE OUTLINE

NJM2570V

■ FEATURES

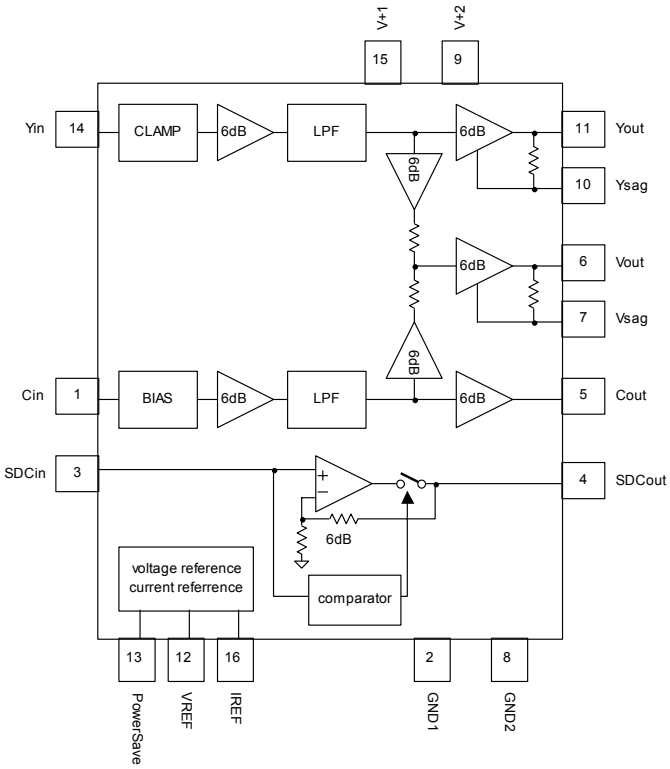
- Operating Voltage 4.5 to 5.5V
- Input Y and C 0.5Vpp
- Internal LPF 0dBtyp. at 4MHz (at IREF=33kΩ)
  -35dBtyp. at 10MHz (at IREF=33kΩ)
  0dBtyp. at 6MHz (at IREF=22kΩ)
  -40dBtyp. at 16MHz (at IREF=22kΩ)
- Internal DC Interface for aspect ratio discrimination
- Bipolar technology
- Package Outline SSOP16

■ PIN CONFIGURATION



1. Cin
2. GND
3. SDCin
4. SDCout
5. Cout
6. Vout
7. Vsag
8. GND2
9. V+2
10. Ysag
11. Yout
12. VREF
13. POWERSAVE
14. Yin
15. V+1
16. IREF

■ BLOCK DIAGLAM



PRELIMINARY

■ **ABSOLUTE MAXIMUM RATINGS**(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	7.0	V
Power Dissipation	P_D	300	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +125	°C

■ **RECOMMENDED OPEARATING CONDITION**(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	MIN.	TYP.	MAX.	UNIT
Operating Voltage 1	Vopr1	V^+1	4.5	5.0	5.5	V
Operating Voltage 2	Vopr2	V^+2	4.5	5.0	5.5	V

■ **ELECTRICAK CHARACTERISTICS**($V^+1=V^+2=5.0V, R_L=150\Omega$, Ta=25°C, IREF=22kΩ at non-designation)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Circuit 1	$I_{CC}1$	V^+1=5.0V, No signal	-	10	18	mA
Operating Circuit 2	$I_{CC}2$	V^+2=5.0V, No signal	-	15	25	mA
Operating Circuit 1 at Power Save	Isave1	V^+1=5.0V, Power Save Mode	-	50	120	μA
Operating Circuit 2 at Power Save	Isave2	V^+2=5.0V, Power Save Mode	-	0	120	μA
Voltage Gain 1(Y Signal)	Gvy	Yin=100kHz,0.5Vpp Input Sign signal	12.0	12.4	12.9	dB
Voltage Gain 1(C Signal)	Gvc	Cin=4.43MHz,0.15Vpp Input Sign signal	12.0	12.4	12.9	dB
Voltage Gain 1(V Signal)	Gvv	Yin=100kHz,0.5Vpp Input Sign signal	12.0	12.4	12.9	dB
Frequency Characteristics (Y Signal)	Gfy1-1	Yin=4MHz/100kHz, 0.5Vpp, Input Sine signal IREF=33kΩ	-3.0	0	1.0	dB
	Gfy1-2	Yin=10MHz/100kHz, 0.5Vpp, Input Sign signal IREF=33kΩ	-	-35	-30	
	Gfy2-1	Yin=6MHz/100kHz, 0.5Vpp, Input Sine signal IREF=22kΩ	-3.0	0	2.0	
	Gfy2-2	Yin=16MHz/100kHz, 0.5Vpp Input Sine signal, IREF=22kΩ	-	-40	-30	
Frequency Characteristics (C Signal)	Gfc1-1	Cin=4.43MHz-500kHz, 0.15Vpp Input Sine signal, IREF=33kΩ	-1.0	1.0	3.0	dB
	Gfc1-2	Cin=4.43MHz+500kHz, 0.15Vpp Input Sine signal, IREF=33kΩ	-5.0	-2.0	1.0	
	Gfc2-1	Cin=4.43MHz-500kHz, 0.15Vpp Input Sine signal, IREF=22kΩ	-1.0	0	1.0	
	Gfc2-2	Cin=4.43MHz+500kHz, 0.15Vpp Input Sine signal, IREF=22kΩ	-1.0	0	1.0	
Maximum Output Voltage Swing 1(Y Signal)	Voym	$V^+1=V^+2$=4.5V,Yin=100kHz, Sine Signal, THD=1%, R_L=75Ω	1.2	1.5	-	Vp-p
Maximum Output Voltage Swing 1(C Signal)	Vocm	$V^+1=V^+2$=4.5V,Cin=4.43MHz, Sine Signal, THD=1%, R_L=75Ω	1.05	1.85	-	Vp-p
Maximum Output Voltage Swing 1(V Signal)	Vovm	$V^+1=V^+2$=4.5V,Yin=100kHz, Sine Signal, THD=1%, R_L=75Ω	1.2	1.4	-	Vp-p
SW Change Voltage High Level for Power Save	VcH	Active	1.8	-	V^+	V
SW Change Voltage High Level for Power Save	VcL	Non-active	0	-	0.3	

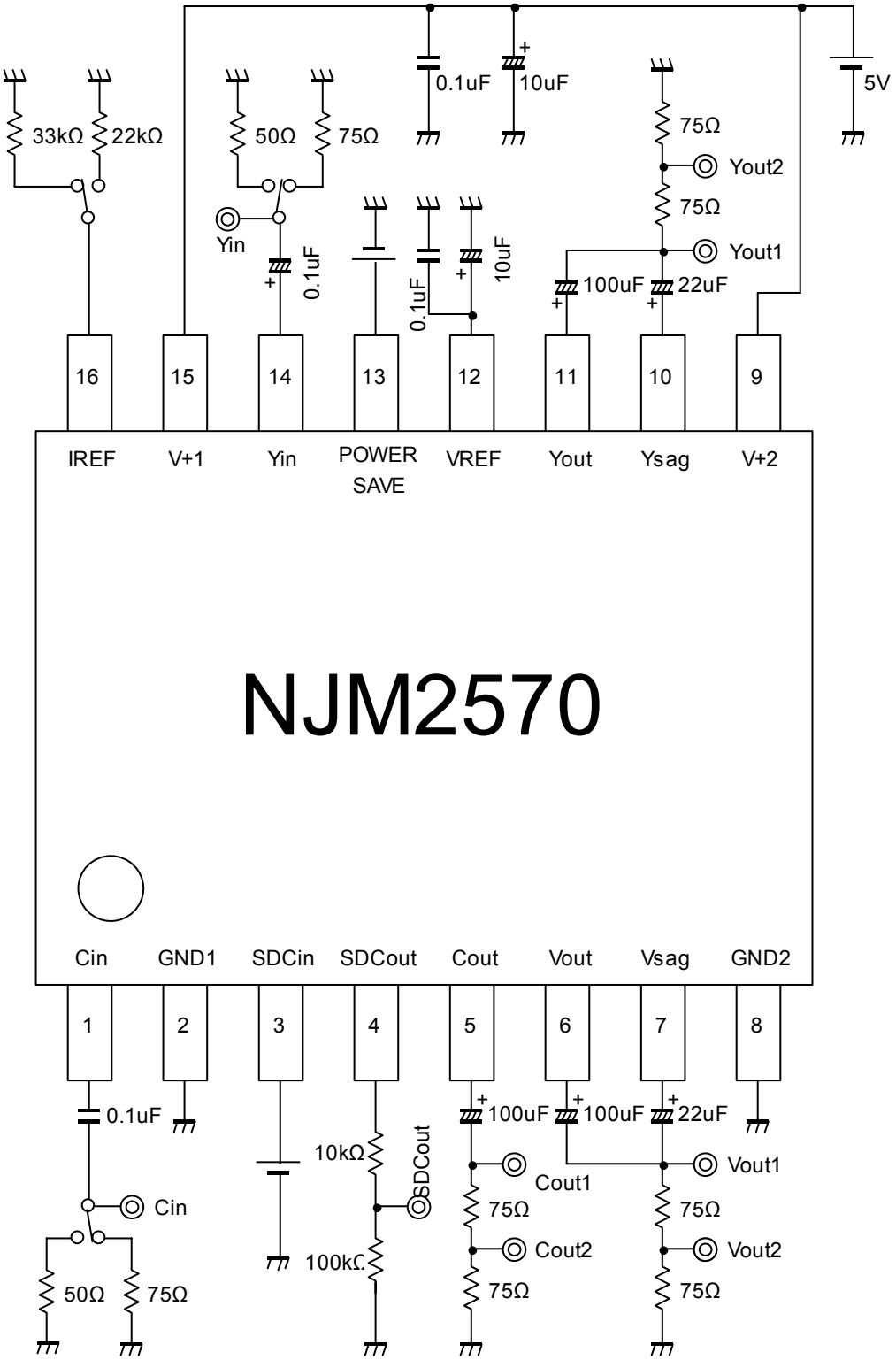
■ **ELECTRICAK CHARACTERISTICS**($V^+1=V^+2=5.0V, R_L=150\Omega$, Ta=25°C, IREF=22kΩ at non-designation)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Crosstark 1(Yin to Cout)	CTyc	Yin to Cout=20log(Cout/Yout) Yin=4.43MHz,0.5Vpp Sine Signal, Cin=AC GND	-	-50	-40	dB
Crosstalk 2(Cin to Yout)	CTcy	Cin to Yout=20log(Yout/Cout) Cin=4.43MHz,0.15Vpp Sine Signal, Yin=AC GND	-	-60	-40	dB
S/N1(Y Signal)	SNy	Yin=50% White Video Signal, R_L=75Ω at Yout Bandwidth 100kHz to 6MHz	55	60	-	dB
S/N2(C Signal)	SNc	Cin=100% Red Field Video Signal, R_L=75Ω at Yout Bandwidth 100Hz to 500kHz	55	60	-	dB
S/N3(V Signal)	SNv	Yin=50% White Video Signal, R_L=75Ω at Yout at Vout Bandwidth 100kHz to 6MHz	53	57	-	dB
2nd. Distortion 1(Y Signal)	Hy	Yin=1MHz,0.5Vpp, Sine Signal	-	-50	-40	dB
2nd. Distortion 1(C Signal)	Hc	Cin=4.43MHz,0.15Vpp, Sine Signal	-	-50	-40	dB
2nd. Distortion 1(V Signal)	Hv	Yin=1MHz,0.5Vpp, Sine Signal	-	-50	-40	dB
SDC Voltage Gain	Gv SDC	SDCin=1.0V,R_L=100kΩ	5.5	6.0	6.5	dB
SDC Maxim Output Voltage	Vom SDC	R_L=100kΩ, $V^+1=V^+2$=4.5V	3.6	-	-	V
Threshold Voltage for SDC Output Impedance	VthR SDC	Change Guarantee for SDC High Impedance	-	-	0.3	V
SDC Output Impedance	RSDC	SDCout at High Impedance	165	220	275	kΩ

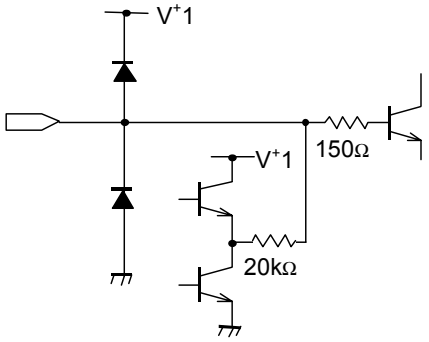
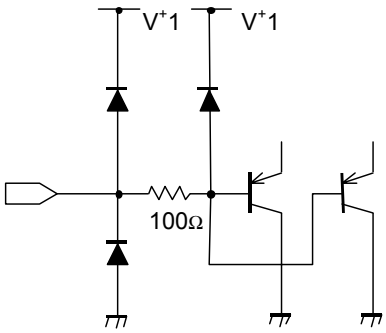
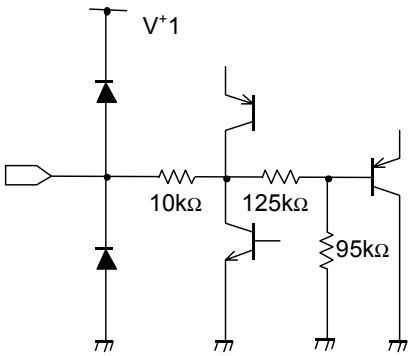
■ **CONTROL TERMINAL**

PARAMETER	CONTROL	NOTES
Power Save	H	Power Save: OFF
	L	Power Save: ON
	OPEN	Power Save: ON

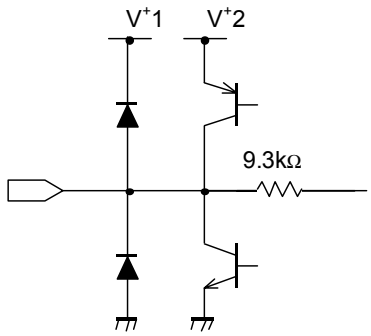
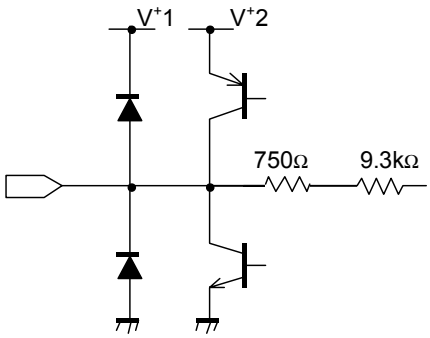
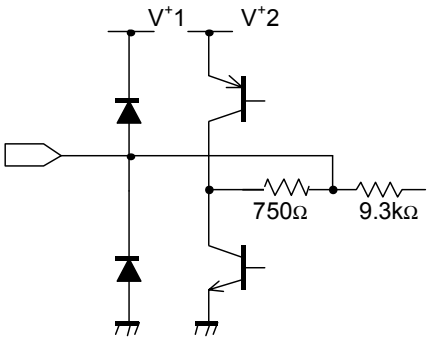
■ **TEST CIRCUIT**



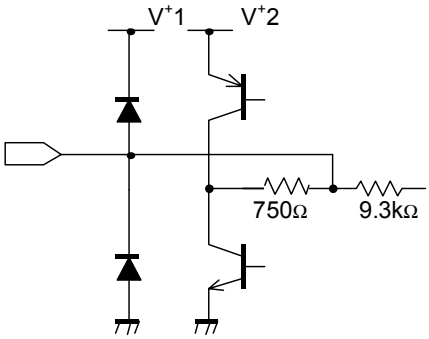
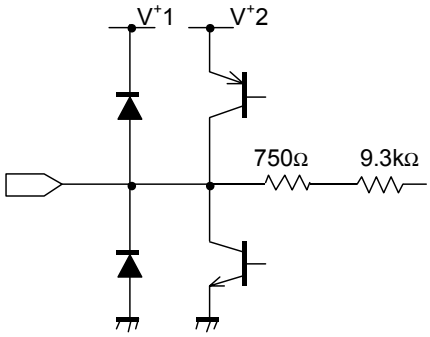
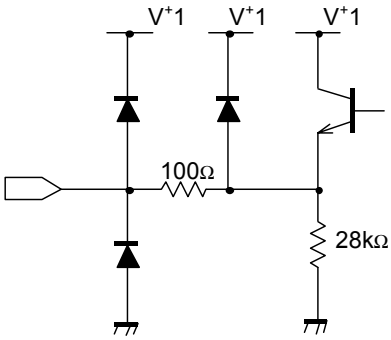
■ **TERMINAL EXPLANATION**

PIN No.	SYMBOL	EQUIVALENT CIRCUIT	DC VOLTAGE	NOTE
1	Cin			
2	GND			
3	SDCin			
4	SDCout			

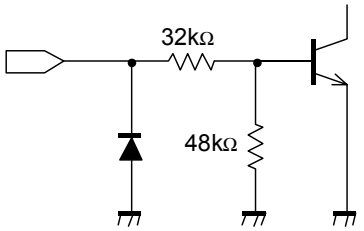
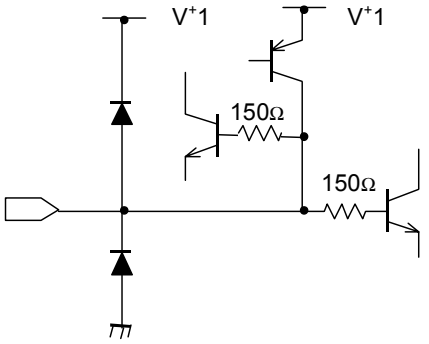
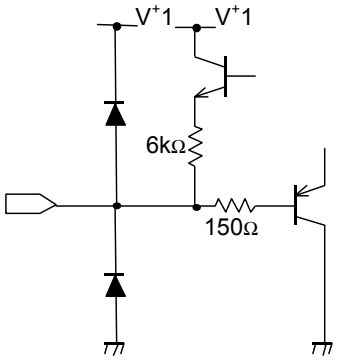
■ **TERMINAL EXPLANATION**

PIN No.	SYMBOL	EQUIVALENT CIRCUIT	DC VOLTAGE	NOTE
5	Cout			
6	Vout			
7	Vsag			
8	GND2			

■ **TERMINAL EXPLANATION**

PIN No.	SYMBOL	EQUIVALENT CIRCUIT	DC VOLTAGE	NOTE
9	V^+2			
10	Ysag			
11	Yout			
12	Vref			

■ **TERMINAL EXPLANATION**

PIN No.	SYMBOL	EQUIVALENT CIRCUIT	DC VOLTAGE	NOTE
13	Power Save			
14	Yin			
15	V^+1			
16	Iref			

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